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Biotechnology Notes

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Biotechnology Notes, a compilation of agency activities, news events, and upcoming meetings, is prepared for members of the U.S. Department of Agriculture's (USDA) Committee on Biotechnology in Agriculture (CBA) by USDA's Office of Agricultural Biotechnology (OAB).

INSIDE USDA

VIRUS RESISTANT PLANT REMAINS ON THE COURT

The fate of the ZW-20 virus resistant squash is still being considered by USDA's Animal and Plant Health Inspection Service (APHIS). The approval of these plants for commercialization has generated a controversy regarding the ecological safety of the use of this type of virus resistant plants in production systems. After several opportunities for public comment, numerous issues have received a wide range of comments from the scientific Community. Most plant pathologists and plant breeders recognize the value of this trait for production systems, and seeing no new risks from its use, support deregulation of the ZW-20 squash. Conversely, some ecologists and public interest groups oppose its approval, suggesting incomplete examination of potential ecological risks from gene transfer to wild relatives or from the formation of new recombinant virus strains. APHIS is currently weighing the evidence.

These issues are neither unique to the U.S. nor to the ZW-20 squash. The methodology is also being used to control viral disease in developing nations. For example, in China a virus resistant tomato has been marketed for human consumption for 18 months; in Mexico virus resistant potatoes are being tested; and in Costa Rica researchers are working on crillo melon. Closer to home, APHIS has granted field testing permits for 57 plants that were developed using this genetic engineering approach. The species include corn, cucumber, melon, peanut, potato, tobacco, lettuce, papaya, beet, barley, alfalfa, watermelon and gladiolus. (For a complete listing contact J.L. White of APHIS at 301-436-5940, FAX: 301-436-8669.)

The important issues regarding commercialization of virus resistant plants will be addressed at the 3rd International Symposium on field testing that will be held November 13-16 in Monterey, CA (See the Upcoming Meetings listing below for

complete information.) Speakers from the UK, the U.S., Germany, and France will be participating in the panel--"Are There Unresolved Issues Regarding the Possible Generation of New Viral Pathogens from Transgenic Plants." Such presentations and discussions will increase the scientific knowledge base useful in reaching consensus on the relevance of ecological risk issues.

BST STILL IN THE SPOTLIGHT!

"The higher producing BST-treated cow presents a lower risk of mastitis per unit of milk than the same cow not administered BST" stated D. Bauman in a news release from Cornell University (August 30, 1994). The new study found that it is normal for the incidence of mastitis to increase as milk yield increases whether by BST or genetic heritage. Bauman noted that "this is logical, because the milk channel is open longer allowing bacteria to enter. However, the major causes are environmental factors such as sanitation and milking management practices. These are far more important" than hormone treatment.

The report was based on studies conducted by 27 principal scientists worldwide. Bauman and A.N. Pell of Cornell were participants. Data were collected from long-term observations of 914 cows in the U.S. and Europe and 2,697 cows on commercial and research farms in eight other countries. All the cattle had received Somatotrope (a Monsanto product) for one full lactation. The study was reported in the August, 1994 *Journal of Dairy Science*. Cornell contact: Bill Steele 607-255-3290.

CANADIANS DELAY USING BST!

An August 17, 1994 decision by the Canadian Government will delay the introduction of the BST for use in Canadian herds until July 1, 1995 (August 21, 1994, *AGBIOTECH NEWSFLASH* from Ag-West Biotech Inc.). "According to a report released by Minister of Agriculture, Ralph Goodale, a task force made up of members from industry, consumers and government will use the time to review rBST's effect on the dairy industry, animal health and genetics, and human health." The task force will monitor consumer reactions in the U.S. and try to separate "myth from reality." The issues are further confused in Canada because the drug has not received a Notice of Compliance from Health Canada, and therefore, companies are prevented from providing information on the product to the public. This restriction does not apply to the special interest groups according to Jean Szkotnicki, executive director of the Canadian Animal Health Institute.

BIO-TECHNOLOGY TRANSFER BY THE FEDS

The Biotechnology Information Institute (BII) has recently published the *Federal Bio-Technology Transfer Directory*. According to an Institute press release, the directory describes "all Federal biomedical, biotechnology and pharmaceutical U.S. patents,

patent applications, licenses granted and Collaborative Research and Development Agreements (CRADA's) from 1980-1993. The Directory describes 2100 Federal inventions, about 1000 licenses and over 500 CRADA's. There is also information regarding the marketplace potential of these products/technologies. The 678 page book has over 400 pages of text/abstracts and 250 pages of indexes, including a 37,000 entry subject index. The Directory is available at a cost of \$150.00.

Ronald R. Rader presented a 21 page analysis of the data contained in the Directory at the recent American Chemical Society National Meeting in Washington, D.C. Data showed that the Federal laboratories were leaders in the biomedical, biotechnology and pharmaceutical areas. For a copy of Rader's paper or additional information, contact him at the Biotechnology Information Institute, 1700 Rockville Pike, Suite 400, Rockville, MD 20852-1631. Tel: 301-424-0255. FAX: 301-424-0257.

USDA PLANT GENOME RESEARCH PROGRAM

The Plant Genome Research Program is a multi-agency project headed by Jerome Miksche, Agricultural Research Service. The Program funds research to find and make available agriculturally important genes. The grants are managed by the Cooperative State Research Service as part of their National Research Initiative Competitive Grants Program. From 1991-1993, the program has expended \$43 million, and awarded more than 270 grants. Forty-one agronomic and tree species and 3 non-crop species are currently being researched. Most of the attention is on 5 plant families--*Coniferae* (Douglas fir and pine), *Cruciferae* (mustard), *Gramineae* (grasses--e.g. corn, rice, oats, etc.), *Leguminosae* (beans, alfalfa, peas, etc.) and *Solanaceae* (tomato, potato, peppers). Some other species in the program are lettuce, cotton, and sunflower. Types of research funded include: low and high density genetic maps, mapping of genes, molecular dissection of gene functions, development of techniques, disease, insect and stress tolerance. Databases of plant genomic information have been established and networked with cooperative information sharing from scientists worldwide.

It is hoped that the knowledge acquired from this program will be used in breeding of new varieties of crops that will reduce producer and consumer costs through pest resistance, tolerance to stress factors (e.g. heat, cold, drought and flood), and improved growth as well as being gentler to the environment. For additional information, contact Miksche at 301-504-6029 or S. McCarthy of the Plant Genome Data and Information Center at the National Agricultural Library at 301-504-6613.

INTERNET ACCESS TO THE PLANT GENOME DATABASE (PGD)

The plant genome database system referred to in the item above is now available via

Internet. It contains data for maize, soybean, wheat, barley, oats, rice, tomato and the plant model *Arabidopsis*. Most of the information details genetic maps and loci, but there are also data related to genes, gene products, bibliographic references, and germplasm resources. Three methods to access the database system are listed below.

Via gopher use "probe.nalusda.gov" port 70 for the gopher form.

Via World Wide Web the URL is "<http://probe.nalusda.gov:8000/index.html>"

For FTP: ftp to "probe.nalusda.gov". Login with "anonymous" and use your e-mail address as the password. Consult the "README" file for additional information.

For additional information, contact the Plant Genome Data and Information Center as listed above.

REPRINTS AVAILABLE FROM OAB

Biotechnology related articles that have appeared in recent issues (July '93-February '94) of *Agricultural Research* have been reprinted in full color. The document contains 7 articles on diverse topics such as breeding a better barley plant, gene mapping of blueberries, genetically engineering *Bacillus thuringiensis* for stored grain pest control, and making plants immune to viruses. The articles are written so a non-scientist can understand them, so they are useful for lay audiences and the classroom. If you would like free copies for distribution, contact OAB (See the shaded box on page 8.)

NEWS AROUND THE NATION (AND THE WORLD)

ISSUE PAPER ON LABELING BIOTECH FOODS

The Council for Agricultural Science and Technology (CAST) has published "Labeling of Food-Plant Biotechnology Products," *Issue Paper* (4) July 1994. The report written by a task force of three scientists (S.F. Barefoot, R.N Beachy and M.S. Lilburn) addresses the question of whether it is logical to evaluate the safety of a new food product by its characteristics and not its means of development (meaning genetic engineering). According to Barefoot, the task force reviewed the scientific evidence supporting the "Food and Drug Administration (FDA) policy guidelines affirming that current regulations are suitable for overseeing the safety, wholesomeness and labeling of both traditionally produced and genetically engineered food plants." The authors think labeling is appropriate when a new plant variety differs significantly from its parents, or when the product is determined to be allergenic, whether developed by

traditional breeding methods or by genetic manipulation. The authors conclude that in the absence of an important known or suspected hazard and if the "new" plant conforms to the identify of the parental plant, no further action is required.

The eight-page paper is available at a cost of \$3.00 from: CAST, 4420 West Lincoln Way, Ames, IA 50014-3447. Tel: 515-22-2125

KEYSTONE SYMPOSIA

The 1995 listing of the Keystone Symposia on Molecular and Cellular Biology has been published. Thirty seven symposia are being offered beginning January 5, 1995 and extending through April 23, 1995. Although many of the topics are biomedically oriented, there are symposia with other orientations such as "Environmental Biotechnology", "Toward the Genetic Manipulation of Insects", "Frontiers of Plant Morphogenesis", and "Signal Transduction in Plants". For the Symposia specifically named above, the registration deadline is Oct. 19, 1994. For a copy of the Symposia descriptions and registration information, contact Keystone Symposia, Drawer 1630, Silverthorne, CO 80498. Tel: 303-262-1230. FAX: 303-262-1525.

SALMONELLA

There are two interesting news items regarding *Salmonella* in the recent issue of *Animal Pharm* (No. 304, July 15, 1994). "The RMIT University of Victoria, Australia has submitted a proposal to the Genetic Manipulation Advisory Committee for trials of a genetically-engineered vaccine against salmonellosis in chickens and other animals." The trial involves a live oral vaccine made from an "aromatic vitamin dependent mutant of *Salmonella typhimurium*."

Trials for a Belgian ELISA *Salmonella* test kit have begun. The test is based on the lipopolysaccharide fraction of the cell membrane of *Salmonella enteritidis*. The researchers are seeking financial partners to take the product to the market place. Contact: FIST (France Innovation Scientifique et Transfert) Tel: 33-1-4051-0090.

NEW UK BIOTECH CENTER

The European Union's Science and Technology for Regional Innovation and Development in Europe (STRIDE) and Queen's University of Northern Ireland have established the Biotechnology Centre for Animal and Plant Health in Belfast. The Center will focus on the molecular basis of disease control. Products for animals are expected to be diagnostic kits and vaccines. Efforts will also be directed to technology transfer partnerships with local industry. For additional information, contact F. Wright, Biotechnology Centre for Animal and Plant Health, The Queen's University of Belfast, Newforge Lane, Belfast BT9 5PX, Northern Ireland. FAX: 44-232-668375.

NEW PUBLICATIONS

■ *NAGRP News*. Published by the National Animal Genome Research Program. Vol. 1 (1), 1993. Contact: Harris Lewin, Managing Editor at 206 PABL, 1201 W. Gregory Drive, University of Illinois, Urbana, IL 61801. Tel: 217-333-5998. FAX: 217-244-5617. Bitnet: blood@uiucvmd. Internet: Lewinh@uiuc.edu.

■ *Canadian Biotechnology. 1994-95 Company Directory*. May, 1994. Produced by Fred Haynes. The directory contains up-to-date descriptions of Canadian biotech companies. with full page profiles. The Directory costs \$175.00. Contact: International Inc., 358 Delrex Blvd., Georgetown, ON, Canada L7G 4H4. Tel: 905-873-1295. FAX: 905-873-6133.

■ *ILRAD 1992: Annual Report of the International Laboratory for Research on Animal Diseases*. 1993. Published by the International Laboratory for Research on Animal Diseases, Nairobi, Kenya. Contact: the Laboratory, P.O. Box 30709, Nairobi, Kenya. Tel: 254-2-632-311 FAX: 254-2-631-499. E-mail 157:CGIO17.

UPCOMING MEETINGS

Oct 2-6: "1994 Second International Symposium on the Applications of Biotechnology to Tree Culture, Protection, and Utilization." The conference will be held in Bloomington, MN. The registration address is: Edith Franson, Executive, Tree Biotechnology Symposium, Forestry Sciences Lab, PO Box 898, 5985 Highway K, Rhinelander, WI 54501 USA. FAX: 715-362-7816.

Oct. 2-6: "Bioenergy '94." The sixth national bioenergy conference. The conference will be hosted by The Western Regional Biomass Energy Program and will be held in Reno/Sparks, Nevada. Contact: Consuelo Bennett at 510-284-3780.

Oct. 5-7: "Registration of Pharmaceuticals in Europe." This is a 3-day course presented by a team of regulatory specialist for the European Union. It is sponsored by ROSTRUM USA and will be held in Rockville, MD. Contact: Arthur Horowitz at 1559 Rockville Pike A, Rockville, MD 20852. Tel: 301-468-9252. FAX: 301-468-9253.

Oct. 6-7: "Conference on Environmental Impact Prediction. Simulation for Environmental Decision Making." To be held at the North Carolina Supercomputing Center, 3021 Cornwallis Rd. P.O. Box 12889, Research Triangle Park, NC 27709. Contact: Christine Stahl. Tel: 704-366-2427. FAX: 704-365-4344.

Oct. 10-14: "Fungal Biotechnology Course." Loch Lomond, Scotland. Contact: E. Clemens, Dept of Bioscience and Biotechnology, University of Strathclyde, 204 George St., Glasgow, G1 1XW, UK. Tel: 041-552-4400 ex. 2085. FAX: 041-533-1161

Oct. 14: "The Challenge of Food Biotechnology Policy: Science, Communication and Public Concerns at a Crossroads." Public Voice's Sixth Annual Biotechnology and the Food Supply Workshop. The Workshop is co-sponsored by US Department of Agriculture and the Food and Drug Administration and will be held at Loew's L'Enfant Plaza Hotel, Washington, D.C. Contact: Carol Marek at 202-371-1840.

Oct. 17-18: "Creative Asset Based Financing for Biotechnology Manufacturing Facilities." This conference is sponsored by International Business Communications and will be held in San Francisco CA. Contact: IBC USA Conferences Inc. at 225 Turnpike Road, Southborough, MA 01772-1794. Tel: 508-481-6400. FAX: 508-481-7911.

Oct. 17-20: "PCR Techniques & DNA Sequencing," and "Recombinant DNA Methodology & DNA Sequencing." These "On the Road Training Courses", to be held in Lake Tahoe, NV, are sponsored by The Center for Advanced Training in Cell and Molecular Biology of The Catholic University of America. For additional information contact The CATCMB, The Catholic University of America, 620 Michigan Ave. NE, Washington, D.C. 20064. Tel: 202-319-6161. FAX: 202-319-4469.

Oct. 31-Nov. 1: "Accelerating Bio/pharm Commercialization." The Conference will be held at the Ritz Carlton/Pentagon City, Washington, D.C. It is presented by The Institute for International Research. To register call 1-800-345-8016.

Nov. 1-2: "Environmental Risk Assessment: Politics and Policymaking." The conference is sponsored by *Inside EPA* and will be held in Arlington, VA. For registration information phone 1-800-424-9068 (in D.C. call 703-416-8505). FAX: 703-416-8543.

Nov. 13-16: "The Third International Symposium on The Biosafety Results of Field Tests of Genetically Modified Plants and Microorganisms." This symposium, being sponsored by a number of U.S and international organizations will be held in Monterey, California. For information contact Maryln Cordle at FAX: 703-235-4429. For registration contact Pat Day at the Univ. of Cal. FAX: 510-451-2317.

Nov. 15-18: "Ninth Crucifer Genetics Workshop-ISHS Symposium on Brassicas, Instituto." To be held in Lisbon, Portugal. Contact: Instituto Superior do Agronomia. FAX 351-1-363-5031.

Nov. 21-22: "Biotechnology in European Society." To be held at the Netherlands Congress Centre, The Hague. Contact: Dr. David Bennett, Secretary, Task Group on Public Perceptions of Biotechnology, Cambridge Biomedical Consultants, Schuytstraat 12, 2517 XE Den Haag, The Netherlands.

Dec. 14-15: "Preparing for a Clinical Audit: Experience with FDA." To be held in Irvine, CA. Contact: A. Horowitz at tel: 301-468-9252. FAX: 301-468-9253.

Jan. 15-19, '95: "Plant Genome III. The International Conference on the Status of Plant Genome Research." To be held at the Town & Country Hotel, San Diego, CA. Contact: Scherago International, Inc., 11 Penn Plaza, Suite 1003, New York, NY 10001. Tel: 212-643-1750. FAX 212-643-1758.

Biotechnology Notes is written by Marti Asner, public affairs specialist in USDA's Office of Agricultural Biotechnology. Any comments or suggestions may be sent to USDA/OAB, Room 1001, Rosslyn Plaza-E, 14th and Independence Ave., S.W., Washington, DC 20250-2200. Telephone: 703-235-4419; Fax: 703-235-4429; e-mail: masner@csrs.esusda.gov. This news publication is also accessible on Internet via Gopher.

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